



United States  
**CONSUMER PRODUCT SAFETY COMMISSION**  
Washington, D.C. 20207

6665 PK 11/13/02

**MEMORANDUM**

**TO :** ES

**DATE:** November 12, 2002

**Through:** Todd A. Stevenson, Secretary, OS

**FROM :** Martha A. Kosh, OS

**SUBJECT:** ANPR to Amend the Standard for the Flammability of  
Clothing Textiles, 16 CFR Part 1610

ATTACHED ARE COMMENTS ON THE CF 03-1

<u>COMMENT</u>	<u>DATE</u>	<u>SIGNED BY</u>	<u>AFFILIATION</u>
CF03-1-1	09/30/02	Jessica McBurnett	2101 Chatsworth Blvd, #10 San Diego, CA 92107
CF03-1-2	10/01/02	Melissa Niednagel	Flex Housing 3900 Lomaland Dr. San Diego, CA 92106
CF03-1-3	10/09/02	Adam R. Varley Technical Director & Co-Founder	Vartest Laboratories, Inc., 19 West 36 <sup>th</sup> St, 10 <sup>th</sup> Floor New York, NY 10018
CF03-1-4	10/09/02	Sally Hasselbrack Ph.D., Boeing Sr. Tech. Fellow & Lana Berry, B.S. Staff Engineer	Boeing <a href="mailto:sally.a.hasselbrack@boeing.com">sally.a.hasselbrack@boeing.com</a>
CF03-1-5	10/15/02	Monona Rossol Health & Safety Director	United Scenic Artists Local 829 (IATSE) 181 Thompson St, #23 New York, NY 10012
CF03-1-6	10/15/02	Erin Ramsey	3900 Lomaland Dr. Flex Housing #45D San Diego, CA 92106
CF03-1-7	11/01/02	Ronald Pacheco Tech. Director	Specialized Technology Resources, Inc. 10 Water Street Enfield, CT 06082

ANPR to Amend the Standard for the Flammability of Clothing  
Textiles, 16 CFR Part 1610

CF03-1-8	11/11/02	Patty Adair Assistant Vice President	American Textile Manufacturers Institute 1130 Connecticut Ave, NW Suite 1200 Washington, DC 20036
CF03-1-9	11/12/02	James Hoebel	13506 Star Flower Court Chantilly, VA 20151
CF03-1-10	11/12/02	Mark Rose Vice President	The Children's Place 915 Socaucus Road Socaucus, NJ 07094
CF03-1-11	11/12/02	Philip Wakelyn Sr. Scientist	National Cotton Council of America 1521 New Hampshire Ave, NW Washington, DC 20036
CF03-1-12	11/12/02	John Biechman Vice President	National Fire Protection Association Suite 210 1110 N. Glebe Road Arlington, VA 22201
CF03-1-13	11/12/02	Steven Spivak PhD	6301 Beachway Drive Falls Church, VA 22044
CF03-1-14	11/12/02	Daniel Crane	Campbell Crane & Assoc. 1010 Pennsylvania Ave, SE Washington, DC 20003
CF03-1-15	11/12/02	Tammie Rollins Manager, Specialty Testing	Consumer Testing Laboratories, Inc. Softlines Testing Lab. 2713 SE Otis Corley Dr. Bentonville, AR 72712
CF03-1-16	11/12/02	Rachel Subler Manager of Government Relations and Communications	American Apparel and Footwear Association 1601 North Kent St. Suite 1200 Arlington, VA 22209
CF03-1-17	11/12/02	Allison Baron On behalf of The Fashion Accessories Association	Sharretts, Paley, Carter & Blauvelt, P.C. 1707 L Street, NW Suite 725 Washington, DC 20036
CF03-1-18	11/18/02	Donald Bliss President	National Association of State Fire Marshals 1319 F St, NW Suite 301 Washington, DC 20004

Flamm  
Comments

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Jessica McBurnett  
2101 Chatsworth Blvd. #10  
San Diego, CA 92107

September 30, 2002

Office of the Secretary  
Consumer Product Safety Commission  
Washington, DC 20207-0001

Dear Honorable Secretary:

Hello, my name is Jessica McBurnett and I am a senior at Point Loma Nazarene University. I am studying Family and Consumer Sciences with an emphasis in Housing and Interior Environments. I am writing in regards to the proposed rulemaking for changing the standard for the flammability of clothing textiles ( 16 CFR Part 1610).

I fully support this proposed change. I believe that the standards by which flammability is tested should follow the modern procedures and therefore they should be updated. The progress made in this area needs to be fully taken advantage of to ensure the optimum safety for the consumer. According to their website, when the standard for the flammability of sleepwear was lowered in 1996, Shriners Hospital for Children experienced a 150% increase in the number of injuries to children pertaining to clothing flammability. This hospital only represents a small portion of burn victims. Examples such as this demonstrate the need for a modernized and higher standard so that consumers can be as safe as possible.

I thank you for your dedication to the improvement of the safety of products in this country. Over 3000 people per year are treated due to clothing related burns and I know that you are working hard to reduce these numbers. Thank you for taking the time to read this letter.

Sincerely,

  
Jessica McBurnett

Flamm  
std amendment

Melissa P. Niednagel  
Flex Housing  
3900 Lomaland Dr.  
San Diego, CA 92106  
Mniednag@ptloma.edu

Office of the Secretary  
Consumer Product Safety Commission  
Washington, DC 20207-0001

October 1, 2002

To The Honorable Secretary:

My name is Melissa Niednagel, and I am a senior Family and Consumer Sciences major with an emphasis in Fashion Merchandising at Point Loma Nazarene University in San Diego. I am writing concerning the possible amendment to the Standard for the Flammability for Clothing Textiles, 16 CFR Part 1610. With the current standards in place being unchanged since 1953, it is apparent that updates to accommodate the changed market are necessary. The textile industry has greatly evolved on a technological level and for safety reasons, it is important that the testing of these materials makes adjustments as well. As a student of the Fashion Industry, I think it is especially important that new flammability standards be set. It is every consumers right to be informed of the degree of safety involved in the materials their clothes are made out of, and not based on a standard that was set nearly fifty years ago.

Thank you for your time and concern.

Sincerely,

*Melissa Niednagel*  
Melissa Niednagel

Stevenson, Todd A.

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**From:** Adam R. Varley [avarley@vartest.com]  
**Sent:** Wednesday, October 09, 2002 5:47 PM  
**To:** cpsc-os@cpsc.gov  
**Cc:** PFairall@cpsc.gov  
**Subject:** Clothing ANPR

Dear CPSC,

I was wondering if it might help to have pictures illustrating the various burn codes added to CFR1610, this might lead to a test method that is easier to understand.

Thanks for giving me the opportunity to comment and please don't hesitate to contact me should you have any questions or comments,

Adam R. Varley  
Technical Director & Co-Founder  
Vartest Laboratories, Inc.  
19 West 36th Street, 10th Floor  
New York, NY 10018

email: avarley@vartest.com  
phone: 212-947-8391  
fax: 212-947-8719  
cell: 917-881-5602

Common  
ANPR 4  
Flamm

**TO: Margaret L. Neily, Project Manager**

**Subject: ANPR to Amend the Standard for the Flammability of Clothing**

As one of voting delegates of ISO/TC38, SC2, my comments are outlined below. This standard needs updating for many of the reasons already outlined in the proposal. I am very familiar with the new cleaning alternatives to perchloroethylene as I have been extensively involved in a 4-year research project to determine alternatives to perchloroethylene.

#### **A. FLAMMABILITY TESTER**

I strongly support the deletion of CS191-53 based upon my experiences as a graduate student wherein I repeatedly found that both two-ply toilet tissue and a single sheet of the daily newspaper could pass that test after being oven dried and placed in the desiccant according to the test procedure. From reading the test method for ASTM D1230, it appears the methods are essentially the same with the exception of the gas specified.

Historically, the test method was designed to specifically eliminate cow boy chaps and brushed rayon sweaters. As practicing professionals within the apparel and textile area, we believe human lives should not be cheapened with a test method that permits the passage of common paper products usable to start fires in a fireplace. Surely, a test method that passes common apparel, but eliminates thin paper products from passing can be identified and defined.

#### **B. DRY CLEANING METHOD**

In the commercial market place there now exist 5 alternates to perchloroethylene. They are: Rynex<sup>®</sup>, GREENEARTH<sup>®</sup>, DF-2000<sup>®</sup>, CO2<sup>®</sup>, wet cleaning. Each of these alternatives to perchloroethylene have been evaluated for dimensional stability after 1 and 10 clean/dry cycles, stain removal, colorfastness to cleaning after 1 and 10 clean/dry cycles and colorfastness to light via the xenon arc test. We have found that wool-rich materials cleaned 10 times in these alternative solvents, wet cleaning and in a commercial laundering can meet the very stringent requirement for continued 'flammability compliance' for foam upholstered seating. Based upon our familiarity with the alternatives to perchloroethylene, we believe they are all candidates for the proposed test procedure. Experience indicates the new cleaning substitutes are equal or more stringent as compared to perchloroethylene in their effect upon a material's ability to pass a vertical Bunsen burner flammability test.

#### **C. LAUNDERING METHOD**

Commercial laundering is more stringent to pass than are the alternative solvents. The dry cleaning/home laundry option of ASTM 1230 should be retained as a part of the new proposed changes in the test method. The number of clean/dry cycles should be increased to more accurately reflect the number of clean/dry cycles a garment is subjected to during usage.

## **D. TEST PROCEDURES**

If the 45-degree angle test is to remain the standard for general apparel, the flame spread time should be changed to increase the level of safety for the general public; or another more stringent test method should be seriously considered. Clearly, the vertical burn test such as used in the Children's Sleepwear Standard and the FAA requirements are not practical for general apparel.

It is very difficult to determine how the brushed specimens are to be mounted as described in the current test procedure CFR1610.4. This needs clarification. Do corduroy, velvet, flannels and long-haired sweaters all fall into the brushed fabric category?

As a graduate student, I did my research on mannequins and instrumented mannequins replicating clothing fires from actual incidents. Using a wooden match as the ignition source, I vividly remember seeing the scorched/charred region at the ignition point enlarge as the gases and heat of combustion were increasing. After about 3 seconds, the 3-4 oz/yd<sup>2</sup> cotton, cotton blend materials would burst into flame. This was coincident with the time the mannequin legs recorded a temperature rise. Within 11-14 seconds, a loosely fitted garment would be totally engulfed in flames and the fire would be at the neckline. This does not provide an opportunity for the startled victim coupled with a delayed reaction to respond before being severely burned. Based upon these consistent observations, a 2.6 oz/yd<sup>2</sup> fabric is too light to ignore unless the test fabric has the following criteria: 1) It is a thermoplastic based material that drips and melts away from the flames; 2) A glass thread is included as a part of the test specimen.

## **E. TEST RESULTS INTERPRETATION**

It is difficult to read the ASTM and the CFR 1610 and ascertain what the exact test procedures are and the pass/fail criteria for each category. Report forms such as those required by the CPSC and the FAA are needed to attain consistent and accurate reporting of the test results from commercial laboratory test facilities.

## **F. TEXT ORGANIZATION**

With the current test method so poorly defined, we recommend the format of an ASTM or AATCC test standard as a good starting point because they are very easy to understand and interpret.

Respectfully submitted for consideration,

Sally A. Hasselbrack, Ph.D. Boeing Senior Technical Fellow  
Lana B. Berry, B. S. textile staff engineer

**Stevenson, Todd A.**

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**From:** Hasselbrack, Sally A [sally.a.hasselbrack@boeing.com]

**Sent:** Wednesday, October 09, 2002 3:14 PM

**To:** 'cpsc-os@cpsc.gov'

**Subject:** Clothing APNRM

Attention: Margaret Neilly

10/9/02



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*Clothing  
ANPR  
Comment A*

United Scenic Artists, Local 829 (IATSE)  
Monona Rossol, Health & Safety Director  
181 Thompson St., # 23  
New York, NY 10012-2586  
212/777-0062 E-MAIL: ACTSNYC@cs.com

Office of the Secretary  
Consumer Product Safety Commission  
Room 502  
4330 East-West Highway  
Bethesda MD 20814

FAX: 301/504-0127

15  
October ~~11~~, 2002

Clothing ANPR

I'm the Safety Director of the United Scenic Artists, Local 829, of the International Alliance of Theatrical Stage Employees (IATSE). I am a chemist/industrial hygienist with a specialty in art and theatrical materials.

THEATRICAL USES OF FIRE RETARDANT FABRICS AND CLOTHING

Some of our members work in scene and prop shops where they are near welding, metal grinding, and other spark and flame sources. They need to know the clothing they purchase, use, and launder is fire retardant.

Other members make costumes and scenery of fabric materials which need to be fire resistant. This is especially important when live flame effects, torches, pyrotechnics, cigarettes, candles, or other sources of fire are used on stage during a production.

In some cases, clothing used as costumes are purchased from general market sources whose manufacturers claim they are fire retardant. In others, the costumes either are made from fabrics alleged to be fire retardant or fire retardants are applied to the costumes.

To put the picture into perspective, you can picture a possible scenario which would be a child actor in sleepwear purchased off the shelf walking on stage with a candle.

LAUNDERING THEATRICAL COSTUMES

It is not uncommon for a costume to be laundered and machine dried every day, sometimes twice a day or more depending on the performance schedule. The machines and detergents used for this laundering are, of course, modern. For this reason, we are very pleased that the CPSC is updating their test to employ modern washing machines, detergents, and dryers.

But the new CPSC tests do not consider the effects of fabric softeners and other additives. And costume attendants are very likely to use fabric softeners, wrinkle reducers, and other additives to enhance the fluffiness and flow of fabrics.

#### FABRIC SOFTENER PROBLEMS

I note that in the March 17, 1999 proposed amendments to the Children's Sleepware rules, the CPSC says at 64 FR 13128:

*Labels on both liquid and sheet fabric softener packages state that they should not be used on garments labeled as flame resistant.*

A trip to your local store will clearly demonstrate that this is not the case. Most of the fabric softeners I saw in my grocery store did not carry any warnings.

There also does not appear to be much study of the effect of fabric softeners on flame retardancy. There were some tests done by the Consumer Reports people in 1999 and they clearly show that liquid fabric softeners generally reduced flame retardancy. They recommended that consumers "avoid all fabric softeners on clothing made of fleece, terry cloth, or velour."

The CPSC alludes to some tests, but I have the impression that very little testing has been done. Again in the March 17, 1999 proposed rule CPSC says:

*However, one polyester fabric did show reduced flame resistance when a liquid fabric softener was used.*

This limited data puts both theatrical users and ordinary consumers in a quandary. Which fabrics should not be laundered with fabric softeners: polyester, fleece, terry cloth, velour? Are these the only unsafe fabrics of the literally thousands of types of fabrics with new ones being invented every year?

And how many times can a fire retarded fabric WASHED WITH FABRIC SOFTENER be laundered before it should be replaced?

#### THE SOLUTION AS WE SEE IT

The best way to address these problem from our point of view is for the CPSC to consider fabric softeners and other additives in the new standards. CPSC needs to determine how much testing of how many different fabrics would be required to demonstrate that a fabric softener does not need to carry a warning.

In fact, it would be helpful if products that passed the tests were labeled to indicate that they have been evaluated and shown not to significantly increase flammability so they could be easily identified.

For those products which are not sufficiently tested, the precautionary principle should be used and these products should be labeled with a warning to not use them with fire retarded fabrics.

Most importantly, the tests should be done using the fabric softeners that are actually sold to consumers rather than on individual chemical components. I suspect that fabric softener manufacturers are relying currently on data from the chemical companies that sell the softener additives for detergent and fabric softener product systems without testing their final product formulations. This practice does not take into account the possible effects of various system components.

Respectfully submitted,

Monona Rossol, M.S., M.F.A.,  
industrial hygienist

Flamm  
std comment

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Erin Ramsey  
3900 Lomaland Drive Flex Housing #45 D  
San Diego, CA 92106  
eramsey@ptloma.edu

October 15, 2002

The Honorable Secretary  
Office of the Secretary  
Consumer Product Safety Commission  
Washington, DC  
20207-0001

Dear Secretary:

My name is Erin Ramsey and I am currently a senior studying Family and Consumer Sciences-- Fashion Merchandising at Point Loma Nazarene University. In striving to learn more about the industry I am studying, I began researching bills and proposals relating to textiles. I stumbled upon the proposed amendment, 16 CFR Part 1610, concerning the flammability standard for clothing textiles.

The standard concerning textile flammability was originally issued in 1953 and in 1972, Congress established the Consumer Product Safety Commission, which established three classes of flammability. Since the commission was established, there have been no significant changes to policies concerning textile flammability. As a student studying fashion merchandising and on the verge of exploring career opportunities in that field, I believe it is of great concern that the proposed amendment, 16 CFR Part 1610 be taken into consideration for the safety of consumers, business owners and you and I. Textiles have significantly evolved over the last fifty years and the proper safety precautions and procedures should be reevaluated as well.

I hope my concern for the safety of textiles will encourage a change in the original standard proposed in 1953. Textiles are used in almost all products today and amending the standard of safety in regards to flammability should be high on our priority list. Thank you in advance for your support and action in regard to this issue.

Sincerely,

Erin Ramsey

Erin Ramsey

November 1, 2002

Ms. Margaret Neily  
Project Manager  
Directorate for Engineering Sciences  
U. S. Consumer Products Safety Commission  
4330 East-West Highway, Suite 610  
Bethesda, MD 20814

Dear Ms. Neily,

It is my understanding that there was a notice in the Federal Register of September 12, 2002 regarding the solicitation of comments on the revision of 16 CFR Part 1610 Standard for the Flammability of Clothing Textiles. Based upon this publication, I would like to comment on revisions that I believe need to be considered. I have had the pleasure over the past forty years of utilizing this standard and considered it to be useful in protecting the general public. However, I do have some very specific recommendations to make it even better.

They are as follows:

1. The method requires that a preliminary test be performed with one specimen in the length direction and one specimen in the width direction and whichever burns the fastest, additional specimens will be cut in that direction. I have seen over the years where this could cause problems such as a burn time in the width direction being slightly lower than the length direction. Since the vast majority of apparel garments are cut in the length direction, this would indicate additional specimens be tested in a direction (horizontal) that has never been a problem in burn injuries. I suggest that the preliminary testing be eliminated and that only the length direction of a garment or fabric be tested.
2. Specifically indicate that animal skins (leather) are exempt, are not textiles and are not subject to the standard. Since the wool from the sheep is exempt, it only makes sense that the skin is also exempt. In fact, the skin (leather) is protective.
3. Suspect fabrics (list attached). Emphasize this list as dangerous and requiring special attention and add it to the standard. There should also be some indication that these "suspect fabrics" be tested on a more frequent basis.

Page 1 of 3

4. Reasonable and representative testing – There should be some statement advising those responsible to develop a special testing program especially for the “suspect fabrics” listed.

5. Abbreviations used to record data on test form – abridge to:

Plain Surface: IBE – Ignited But Extinguished

DNI – Did Not Ignite

0.0 Seconds – Actual Time of Burn

Raised Surface: SFuc – Surface Flash Under Cord

0.0 BB Seconds – Actual time of burn – Base burn

0.0 SF Only – Time in seconds, surface flash only. No damage to the base fabric

0.0 SFBB – Time in seconds, surface flash base burn

6. A clearer definition of the difference between a Plain Surface Fabric with examples and a Raised Surface Fabric with examples. You may want to consider a definition of a Raised Surface Fabric that would include the statement that it is a fabric which has a raised fiber surface because of an additional process (rather than, as an example, a loose knitted cable sweater being considered a raised fiber surface fabric because it has a hairy surface).

7. There should be a Class 2 criteria for Plain Surface Textiles. Suggest 3.5 to 7.0 seconds. Then the criteria would be equal to raised surface textiles. There have been numerous times when a fabric will have a average burning rate of 3.6 for Plain Surface, thus being considered a Class 1 fabric – acceptable. However, there have also been times when that same fabric was tested again with the result of an average burning rate of 3.4, which is a Class 3 fabric and a failure. There needs to be a safety area similar to the Raised Surface fabrics.

This problem is predominate with lightweight silk and rayon items such as scarves.

8. CPSC should consider adopting a policy where answers to any technical questions regarding the standard be in writing only and that the answers also be in writing. If and when this is done, the staff could then periodically publish all the questions and to make them public to the entire industry. Think about it.

I would be more than happy to discuss all or any of the items above in greater depth at your convenience.

Best Regards,

A handwritten signature in black ink, appearing to read "Ronald J. Pacheco".

Ronald J. Pacheco  
Technical Director, Softlines  
Consumer Product Testing

RJP/cl  
Attachment

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## SUSPECT FABRICS

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**PLAIN SURFACE FABRICS:** Textiles without nap, pile, tufting, flock, or other type of raised-fiber surface.

**Light-weight Fabrics:** Fabrics weighing less than 2.6 ounces per square yard composed of cotton, rayon, ramie, acetate or silk fibers. This includes, but is not limited to:

- |                         |                           |                       |
|-------------------------|---------------------------|-----------------------|
| • Cellophane or Chiffon | • Leno Weaves             | • Swiss Marquisette   |
| • Cheese Cloth          | • Lightweight Momme Cloth | • Tissue Faille Crepe |
| • Crepe de Chine        | • Lingerie Batiste        | • Tissue Gingham      |
| • Crinoline             | • Marquisette             | • Tobacco Cloth       |
| • Gauze                 | • Moss Crepe              | • Tulle               |
| • Georgette             | • Net                     | • Veiling             |
| • Lace                  | • Ninon                   | • Voile               |
| • Lawn                  | • Organdy                 |                       |

**RAISED SURFACE FABRICS:** Napped, pile, tufted, flocked, or other textiles having a raised-fiber surface. These include but are not limited to:

- |                  |                  |
|------------------|------------------|
| • Chenille       | • Imitation Furs |
| • Corduroy       | • Sherpa         |
| • Flannel        | • Terry Cloth    |
| • Flannelette    | • Velour         |
| • Fleece         | • Velvet         |
| • Flocked Weaves | • Velveteen      |
| • French Terry   |                  |

**EXEMPTIONS:** The CPSC exempts certain fabrics from the Flammability Testing Requirements. The following is a list of these exemptions.

☒ Plain Surface Fabrics which weigh 2.6 ounces per square yard or more, regardless of their fiber content.

☒ All Fabrics (both Plain & Raised Fiber Surface) made completely from any of the following fibers, or entirely from combinations of the following fibers:

- |             |              |
|-------------|--------------|
| • Acrylic   | • Modacrylic |
| • Nylon     | • Olefin     |
| • Polyester | • Wool       |



Flamm  
comment 8



AMERICAN TEXTILE  
MANUFACTURERS INSTITUTE

November 11, 2002

Office of the Secretary  
U.S. Consumer Product Safety Commission  
Washington, DC 20207

Re: Clothing ANPR

Dear Mr. Secretary:

The American Textile Manufacturers Institute (ATMI) appreciates the opportunity to respond to the U.S. Consumer Product Safety Commission's request for comments on the proposed advance notice of proposed rulemaking to amend the flammability standard for clothing textiles (67 Federal Register 57770; September 12, 2002).

The Flammable Fabrics Act, enacted in 1953 and amended by Congress in 1967, continues to protect the American public from dangerously flammable wearing apparel. ATMI agrees that some sections of the Standard for the Flammability of Clothing Textiles (16 CFR 1610) are outdated and should be modernized to better reflect current consumer care practices and technologies and to clarify the language of the standard so that testing and reporting practices are uniform from laboratory to laboratory.

ATMI suggests that the CPSC staff consider current U.S. voluntary standards for textiles developed by ASTM International Committee D13 on Textiles and the American Association of Textile Chemists and Colorists (AATCC) as appropriate when revising the Standard for the Flammability of Clothing Textiles.

Please contact me at 202-862-0518 or padair@atmi.org if you have any questions or need additional information.

Sincerely,

Patty K. Adair  
Assistant Vice President  
Textile Products & Standards



1130 Connecticut Ave., NW • Suite 1200 • Washington, DC 20036-3954  
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fax on demand: 202-862-0572



Flammability 9

**James F. Hoebel  
13506 Star Flower Court  
Chantilly, Virginia 20151**

November 12, 2002

Clothing ANPR

Office of the Secretary  
Consumer Product Safety Commission  
Washington, DC 20207-0001

This letter responds to the September 12, 2002, Federal Register Notice soliciting comments from the public on the Advanced Notice of Proposed Rulemaking for The Standard for the Flammability of Clothing Textiles.

The Notice describes the intent of the ANPR to better reflect current consumer practices and technologies and to clarify several aspects of the Standard. Certainly these changes are needed and are in the public interest. However, the changes are unlikely to affect appreciably the identified large number of casualties associated with clothing textiles that continue to be observed year after year.

CPSC identifies an estimated 153 deaths and 4,000 emergency room injuries annually from ignition of clothing. In addition, it is well known that these injuries are usually quite severe: the hospitalization rates for clothing burns are substantially higher than the rates for most other consumer products. It is instructive to compare these death and injury estimates with similar estimates for other products involving fire that CPSC is currently addressing: open flame ignition of mattresses/bedding was associated with an estimated 80 deaths and 980 injuries in 1998; open flame ignition of upholstered furniture was associated with 100 deaths and 410 injuries in the same year; and candles were associated with 170 deaths and 1200 injuries. Clearly, the size of the clothing death and injury problem demands attention.

During the Commission's lifetime, this issue has arisen more than once. For instance, in the mid 1970's, CPSC supported the National Bureau of Standards (now the National Institute of Standards and Technology) in a project to develop an improved test method for apparel that could be used in a new standard designed to provide additional protection to the public beyond that provided by 16 CFR 1610. The test method was developed, but CPSC did not proceed with rulemaking. Again, in 1986-1987 an industry/public/government consortium was formed to consider the problem. While no consensus for a more effective standard was forthcoming, an information brochure was developed, "What Smart Shoppers Know About Nightwear Safety," that provided information on the relative flammability of different fibers used in clothing. Later, in 1990, CPSC considered whether to initiate action to address nightwear intended for the elderly. The Commission voted to not proceed.

In retrospect, it is clear that one major factor preventing the Commission from moving forward was the lack of specific knowledge of the circumstances surrounding these many burn injuries and deaths. That lack exists today.

The Commission does not have reliable and up-to-date data on the ignition and burning sequence of clothing burn injury cases, data that are essential to determining an effective, reasonable, and practicable agency approach to reducing this excessive burn toll and, then, to supporting the appropriate approach. Information needed includes detailed identification of important ignition sources; flame impingement mechanisms; actions and reactions of the victims; contributions and demographics of any other involved individuals; environmental factors such as locations and other products involved; critical characteristics of the garment/garments involved such as fiber identification, fabric construction, weight, styling factors, fit, size, and ignition/flammability properties; etc.

The Commission is urged to initiate a comprehensive, complete, objective, and statistically representative field data collection project as soon as possible. The project should be supported by appropriate laboratory testing. The project must be carefully designed to have a high probability to produce the desired meaningful results that are capable of supporting an effective injury/death reduction activity. The project design/plan should be shared with the affected stakeholders, including manufacturers, retailers, the fire community, consumers, Congress, etc. and then thoroughly tested.

There should be little if any objection to such a project, except for budget limitations. The goal, after all, would be to accumulate knowledge and seek the truth. Perhaps other agencies would be interested in jointly funding the project. Actually, there may even be sufficient support in the Congress to provide a supplementary appropriation for the work.

Thank you for the opportunity to provide these comments. The magnitude of the clothing flammability problem is compelling. But the Commission must first do its homework.

Sincerely,

James F. Hoebel

**Stevenson, Todd A.**

---

**From:** James F. Hoebel [jfhoebel@erols.com]  
**Sent:** Tuesday, November 12, 2002 11:00 AM  
**To:** cpsc-os@cpsc.gov  
**Subject:** Clothing ANPR

Dear CPSC:

Attached is my letter responding to the September 12, 2002, Federal Register Notice soliciting comments on the ANPR for the Standard for the Flammability of Clothing Textiles.

Please let me know if you have any difficulties in receiving this comment, if you require a signed original copy, or if you need additional copies.

Sincerely,

James F. Hoebel

11/12/02

*Flamm  
comment*

**Via Facsimile**  
**301-504-0127**

**November 12, 2002**

Office of the Secretary  
Consumer Product Safety Commission  
Room 502  
4330 East-West Highway  
Bethesda, MD 20814

**Re: Clothing ANPR**

Dear Sir or Madam:

In response to your Federal Register notice, dated September 12, inviting public comments on any existing standard in connection with its consideration for amending the Standard for the Flammability For Clothing Textiles, 16 CFR Part 1610 (the "Standard"), The Children's Place hereby respectfully submits the following comments and suggested revisions to the sample preparation and testing methods prescribed by the Standard.

The Children's Place Retail Stores, Inc. is a leading specialty retailer of high quality, value-priced apparel and accessories for children, newborn to age twelve. The Company designs, contracts to manufacture and sells its products under the "The Children's Place" brand name. As of August 2002, the Company operated over 600 stores, including 24 stores in Canada. The Company also sells its merchandise through its virtual store located at [www.childrensplace.com](http://www.childrensplace.com). Consequently, it is of utmost importance to the Company that the current Standards are revised to improve the efficacy of its required testing methods.

Inaccurate sample preparation and conditioning or test execution by the technician carrying out the test can seriously undermine the efficacy of the Standard. Specifically, two areas are of immediate concern: (1) in determining the nap direction of raised surface fabric; and (2) in ensuring the potency of the desiccant used in the dessicator chamber.

The sample preparation and conditioning phase of testing is an area which could result in inaccurate burn results. This is particularly evident in the case of raised surface fabrics which is defined as "any textile fabric which has an intentionally raised fiber or yarn surface such as a pile, nap, or tufting." According to the Standard, preparation for raised surfaced fabrics requires the fabric to be brushed once against the lay of the nap to get a truly accurate burn. A potential problem occurs in determining the direction of the nap, which requires visual accuracy and,

Office of the Secretary, CPSC

November 12, 2002

Page 2

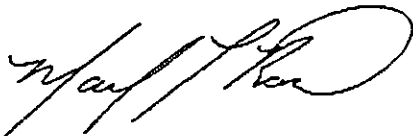
accordingly, becomes more subjective as the pile length decreases. When working with flannels and other low-pile fabric, for example, raising the tufting is difficult. Therefore, determining the correct direction of the nap may be complicated. A suggested revision to the testing method would be to require preliminary testing using four (4) specimens (2 of the length and 2 of the width of each sample), instead of using just one specimen. The four (4) specimens should then be mounted for brushing, with 1 inverted length-wise and 1 inverted width-wise, so that all possible nap direction combinations are covered during the brushing. The result for all subsequent burn times and codes will then be based on a worst-case scenario.

Another area of potential inaccuracy arises in the desiccant used during the testing stage. After samples are cut, mounted and brushed, the samples are oven treated, and then placed in a dessicator to cool. The dessicator contains anhydrous calcium chloride which prevents the specimen from reabsorbing moisture from the environment. A potential problem arises in determining the freshness of the desiccant, and consequently the efficacy of the testing. Since anhydrous calcium chloride does not provide a visual indication that it has lost its potency over time, the only way to monitor its continued effectiveness is through the use of a hygrometer which monitors the temperature and relative humidity inside the dessicator chamber. Currently, a testing technician is not required to record temperature and humidity readings on testing data sheets. A suggested revision to the Standard would require the maintenance of daily logs detailing the initial temperature and humidity readings at the start of each day, as well as after each test is completed. These readings would then be recorded on both the technician's data sheet, as well as on the test reports supplied to the testing lab's client. This record-keeping requirement would be consistent with the ASTM's other requirements in its physical testing standards (ie. testing for abrasion resistance or stretch recovery).

In accordance with the purported goals of the Standard, which is to reduce the danger of injury or loss of life resulting from the use of dangerously flammable textiles in the garment industry, we respectfully submit the foregoing suggested revisions to the Standard.

Thank you for your consideration of the views of The Children's Place. Should you require any additional information, please call me at (201) 558-2400.

Very truly yours,



Mark L. Rose  
Vice President - Manufacturing



1521 New Hampshire Avenue, NW • Washington, DC 20036  
(202) 745-7805 • FAX (202) 483-4040

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November 12, 2002

Mr. Todd Stevens  
Office of the Secretary  
U.S. Consumer Product Safety Commission  
Washington, DC 20207

**Re: Clothing ANPR; comments of the National Cotton Council to the CPSC ANPR on  
Standard for the Flammability of Clothing Textiles (67 FR 57770; September 12, 2002)**

Dear Mr. Stevens:

These comments are submitted by the National Cotton Council (NCC) in response to the U.S. Consumer Product Safety Commission's request for comments on the advance notice of proposed rulemaking to amend the standard for the flammability of clothing and textiles intended for clothing use. The NCC is the central organization of the U.S. cotton industry, representing producers, ginner, oilseed crushers, merchants, cooperatives, warehousemen and textile manufacturers in 18 states. NCC represents approximately 25,000 cotton producers and about 970 gins that annually gin about 18 million bales of cotton. NCC mill members use over 7.5 million bales domestically to produce cotton textiles. NCC has a long history of commitment to product safety and has worked cooperatively with CPSC on flammability issues since it was formed.

The Flammable Fabrics Act (FFA), as enacted by Congress in 1953, specified a test method ("CS-191-53"; this test was codified by CPSC in 1975 as 16 CFR 1610) to determine if fabric or clothing is "so highly flammable as to be dangerous when worn by individuals". This Standard in place since 1953 for the Flammability for Clothing Textiles has been very effective for the purpose it was intended and continues to protect the American public from highly/dangerously flammable wearing apparel. No change is needed to the flammability test method.

The flammability standard for clothing textiles (16 CFR 1610) describes a flammability test apparatus and procedures for testing clothing and textiles intended for clothing use. NCC agrees that some sections of 16 CFR 1610 are outdated and need to be modernized and clarified to reflect current consumer practices and technologies better and to clarify the language of the standard so that testing and reporting practices are uniform from laboratory to laboratory.

- Since the flammability tester prescribed in the standard is an apparatus that is no longer available to be purchased, a more modern tester that incorporates electronic timers and other electro-mechanical devices that control and apply the flame impingement is needed. CPSC

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needs to consider the more modern test apparatus that some manufacturers and laboratories are using.

- For appropriate changes to the laundering and dry cleaning procedures and when revising and clarifying other aspects of this Standard for the Flammability of Clothing Textiles, NCC suggests that the CPSC staff consider current U.S. voluntary standards for textiles developed by the American Association of Textile Chemists and Colorists (AATCC) and the American Society for Testing and Materials (ASTM) International Committee D13 on Textiles. For example, for laundering, AATCC 124-1996, which CPSC incorporated recently into their other flammability standards, is appropriate. CPSC should consider whether more than one home laundering is necessary for some clothing or textile intended for clothing use.
- CPSC should add some portions of the CPSC Engineering Laboratory Test Manual to the standard as a non-mandatory Appendix to help clarify how the standard should be performed.
- A better definition of "surface flash" and "base burn" are needed; for these CPSC should use the definition in the Appendix of CS-191-53, which was not incorporated in the FFA, as was suggested in the CPSC March 25, 2002 Briefing Package for the Standard for the Flammability of Clothing Textiles (p.27). Much needs to be clarified about specialty fabrics and how to decide if a fabric is "flat or raised".
- CPSC also mentioned considering clarifying and amending regulations concerning fabrics exempted from testing for guaranties but did not give any details on what they are considering. Any changes (additions or deletions) to exemptions should be based on sound-science test data.
- Reorganizing and eliminating duplication to the standard is also needed.

CPSC should consider promulgating a procedure/mechanism that allows the agency to make technical changes to this and other standards on a routine basis when various requirements of the standard (e.g., laundering and dry cleaning) are upgraded/modernized by AATCC and ASTM, without having to go through full notice and comment rulemaking.

If there are questions or for additional information is needed please contact me (202-745-7805; [pwakelyn@cotton.org](mailto:pwakelyn@cotton.org)).

Sincerely,



Phillip J. Wakelyn, Ph.D.

Senior Scientist, Environmental health and Safety





Flam  
comment 12

November 12, 2002

Office of the Secretary  
Consumer Product Safety Commission  
4330 East-West Highway  
Room 502  
Bethesda, Maryland 20814

To Whom It May Concern:

I am taking this opportunity, on behalf of the National Fire Protection Association (NFPA), to comment on the proposed rulemaking on 16 CFR 1610, the Consumer Product Safety Commission's (CPSC) "Standard for the Flammability of Clothing Textiles". I applaud your decision to address this standard and update it to include more modern testing techniques and equipment. As you make these changes, NFPA is of the opinion that there is an opportunity to review other design specifications in the standard and assure that they reflect current realities and knowledge.

One area I would recommend for review is the ignition or flame source. When the standard was developed in the 1950s, clothing ignitions due to butane lighters or candles were less common or less recognized than they are today, in large part because both of these products have seen greatly increased popularity in the past half-century. These two sources of small open flame ignition both involve larger initiating flames than cigarettes, matches, sparks and embers that have long been recognized as sources of clothing ignitions. Also, the rapid growth in the elderly population has raised awareness of clothing ignitions by stovetop gas-fueled burners, another scenario where a sizeable initiating flame is not uncommon. It would seem reasonable that a slightly larger and more intense flame source should be considered to reflect these scenarios. Similarly, I would also recommend review of the length of time that fabric is exposed to the ignition source, to ensure that that specification is consistent with key clothing ignition scenarios.

Another aspect of testing that the CPSC may wish to consider is the importance of both vertical and horizontal orientation. If you review each of the scenarios described above, it will be clear that some begin on a vertically oriented clothing surface (e.g., a lighter, match or cigarette ignition on the chest area of a sitting or standing person), some begin on a horizontally oriented clothing surface (e.g., a lighter, match or cigarette ignition in the lap of a sitting person), and some begin on a horizontal oriented clothing surface that will quickly become vertical as the person breaks contact with the flame source (e.g., a stovetop burner or candle ignition of a horizontally extended sleeve that become vertical in orientation when the victim pulls back his or her arm). Because clothing will burn quite differently in horizontal and vertical orientations, it is important that the test

*Washington Office*

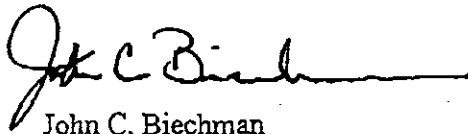
NFPA's mission is to reduce the worldwide burden of fire and other hazards on the quality of life by providing and advocating scientifically-based consensus codes and standards, research, training, and education.

conditions reflect all important scenarios in this respect Melting behavior by many synthetic fabrics can bring fire to or away from skin, depending on orientation, and the performance of fire retardant treatments may be affected as well.

Our final area of concern relates to specialty types of clothing. Some clothing types may be exposed to greater risks than others and may need special testing or designation. For example, CPSC 1615 addresses children's sleepwear. As you know NFPA has expressed grave concern over the exemptions made in 1996 in the Children's Sleepwear Regulations, but for the purpose of this exercise, we simply take note of the fact that there exists a standard to address one category of clothes of special concern due to the vulnerability of the people wearing them or the hazards associated with their use. On the other hand, a case could be made for special concern with adult sleepwear and bathrobes, particularly when worn by the more vulnerable elderly population. We urge the CPSC to take the occasion of this review of 1610 to consider whether adult sleepwear needs to be regulated in a similar fashion to CPSC 1615. Barring that, NFPA urges that adult sleepwear and bathrobes should at least be required to perform at the highest and only the highest level covered by an updated 1610. To my knowledge, that is not currently a requirement.

On behalf of NFPA I want to thank CPSC for the opportunity to address the 1610 standard and the proposed changes. I urge you to review our suggestions, as well as others you receive and do what is required to use our best current product evaluation tools and fire safety science knowledge to save lives and prevent injuries.

Sincerely,



John C. Biechman  
Vice President  
Government Affairs

Stevenson, Todd A.

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*Flame  
Comments* 13

**From:** Steve Spivak [ss60@eng.umd.edu]  
**Sent:** Tuesday, November 12, 2002 4:23 PM  
**To:** cpsc-os@cpsc.gov  
**Subject:** Comments on "Clothing - ANPR"



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Attn.: Margaret Neily, Directorate for Engineering Sciences, US CPSC.

Attached is a three page file in MSWord with my preliminary comments in  
response to your ANPR. I will also send them by facsimile. Thank you. S  
M Spivak.

--  
Steven M. Spivak, PhD, CText, FTI [Fellow of The Textile Institute]  
Professor Emeritus, Fire Protection Engineering  
University of Maryland - <http://www.enfp.umd.edu>

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## **CLOTHING ANPR - COMMENTS ON 16 CFR PART 1610**

Prepared by Steven M. Spivak, PhD, CText, FTI  
Chartered Textile Technologist, Fellow of The Textile Institute, and  
Professor Emeritus, Dept. of Fire Protection Engineering, University of Maryland

Contact/address: 6301 Beachway Drive, Falls Church, VA 22044-1510  
Sent by Email and telecopier on November 12, 2002

0. Justification. It is long overdue for CPSC to undertake a major review of the Standard for the Flammability of Clothing Textiles, 16 CFR Part 1610, as noted in the Federal Register vol. 67, No. 177, Sept. 12, 2002. Specifically, a complete study should now be undertaken to bring this outdated flammability standard up to modern technology and consistent with fire safety fundamentals. I commend the CPSC for publishing its ANPR to consider amending the existing standard, although a patchwork, piece meal approach is insufficient. A complete study, data analysis with in depth investigations, and consideration of realistic flammability hazard is what is now needed and required. There are certain issues that I will, however, briefly address.

1. Repairing the existing standard. First, the existing standard is both totally inadequate and misleading as a measure of fire and flammability hazard for clothing and apparel textiles. It does not measure true, realistic fire and burn hazard; and has remained essentially unchanged for almost fifty years. But at the very least if it is not scrupulously reviewed and studied, then certain improvements in an albeit flawed test method and standard must be introduced to repair certain of its weaknesses. Yet I remain convinced from prior and available burn data, continuing clothing fire injuries, plus extensive professional experience of thirty years, that cosmetic changes or clarifications to the existing standard will not result in necessary improvements to consumer and public fire safety.

For example, it is unjustified to rely on solely a one second ignition when the overwhelming majority of fabrics so tested do not ignite (DNI) under those artificial conditions. Forced ignition at the very least is some improvement; while minimizing the widespread misconception and misunderstanding that such DNI test results imply the fabric "does not ignite." Of course it may ignite in many cases, and indeed does in many serious and life threatening clothing burn injuries we continue to see each year.

Further, I have argued and voted before in the test method development arena to require that the needle ignition flame be impinged on the lower cut edge of the test specimen in CS-191-53, rather than on the fabric surface. A simple repositioning of the fabric holder vis-a-vis the flame tip should at least result in markedly more ignitions than in the current test scenario.

2. A comprehensive study, analysis and rethinking is required. The standard is sorely in need of complete study, including current burn injury data, known aspects of clothing fire hazard assessment and burn injury potential. These must all be carefully studied to assess what improvements and changes to the current test method and standard are necessary. A complete and comprehensive clothing burn injury study and analysis is long overdue. The CPSC does not have an up to date, reliable and effective set of data and burn scenarios to understand the clothing burn injury problem in light of today's technology and safety. It is imperative that CPSC focus on these data and safety needs regarding the continuing, serious burn injuries and deaths resulting from avoidable clothing fires.

3. A completely new and modern approach to clothing and apparel fire testing. Third, the CPSC in conjunction with NIST/DoC has earlier studied in depth, considered and proposed alternative clothing flammability test methods, devices and possible standards for general wearing apparel; and for specified apparel categories including high hazard, higher risk categories of the population such as those wearing adult sleepwear, children's clothing and girl's dresses, children's playwear; and any looser fitting, ignition prone fabrics and garments used as wearing apparel. It is timely for CPSC to seriously review its earlier studies and progress to date; taking what has been learned, and to reconsider certain aspects of that prior work in light of the weaknesses and inadequacy of the current 45 degree test method CS-191-53, incorporated into The Flammable Fabrics Act as 16 CFR Parts 1610, Flammability for Clothing Textiles.

4. Limitations of the CS-191-53 flammability tester and Federal flammability standard, test method. This test is the prescribed flammability test method for clothing textiles as specified in the Flammable Fabrics Act and 16 CFR Part 1610. Even ordinary newsprint-paper passes the Federal flammability standard and as such, is class I "normal flammability." I have previously tested newsprint and can also attest that it passes this flammability standard; and as a test comparison it says much.

It is my professional opinion that the existing Flammable Fabrics Act 16 CFR Part 1610 is insufficient as a measure of overall flammability in actual use or reality, and the same standard has now remained essentially unchanged since 1953 or before. The original Commercial Standard CS-191-53 was developed primarily by and for the textile industry. If the fabric fails to ignite from the tiny flame and one second surface (rather than edge) ignition, that alone is sufficient to comply with the requirements of CS-191-53 and the Flammable Fabrics Act. It is not to be considered an indication of the state of the art, knowledge or standard of care in the industry.

The CS-191-53 flammability test uses a tiny igniting flame from a number 26

hypodermic needle, impinging for one second only onto the surface of a narrow exposed strip of fabric mounted between metal plates held at 45 degrees. In CS-191-53 the fabric is not held vertically as it is in the children's sleepwear standard 16 CFR Part 1615-1616, or loosely and unrestrained as is the normal configuration for most clothing as worn. In the vertical configuration, fabric is easier to ignite and burns more rapidly and intensely, due to the rising flame and flammable gases preheating the fabric ahead. There is an arbitrarily small igniting flame of very brief ignition time; metal specimen holders to interfere with burning properties; a draft free test chamber unlike real life conditions; failure to measure burning beyond the limited time specifications, or beyond the short sample length; failure to measure flame and heat intensity, as heat transfer and heat flux are known to contribute to skin burn injury; failure to measure extinguishability or ease of extinguishment; and failure to take into account real life conditions of other ignition sources and garment design hazard.

It was the original intent of Congress when it passed the Flammable Fabrics Act to remove only the most dangerous and intensely flammable of fabrics from the marketplace. Their action did not prevent other, unreasonably dangerous garments from being produced and sold in commerce. Similar opinions criticizing the inadequacy and false sense of security of the commercial standard CS-191-53 test method and its use in the Flammable Fabrics Act CFR Part 1610 have been given by other experts, fire protection authorities and Members of Congress.

5. Failure to Warn of Flammability Hazard. In addition, manufacturers, importers, distributors and/or retailers have a duty to warn users and consumers of the potential flammability of high hazard garments. It is well known, or should be known to fiber, textile and apparel personnel including manufacturers, wholesalers, distributors and retailers how dangerous and flammable are certain garments. There is an abundance of literature and information on this subject. The failure to warn involves the risk of serious harm and possibly death by burns resulting from the ignition of garments. There is a duty to inform or warn the purchaser and consumer of the fact that hazardous garments are extremely easy to ignite, and once ignited burn with such rapidity that the wearer is unable to extinguish the flames or extricate oneself from a garment which is now being consumed by flames in a brief period of time. Consumers are simply unaware of the dangers and peril.

The CPSC has considered programs including warning labels for high hazard garments such as adult sleepwear - nightgowns, plus robes and housecoats. The same can be argued for children's garments and playwear, for example. It is timely for CPSC to reconsider means of public information and clothing fire safety education, including warning labels in high risk categories, and on certain hazardous garments whose fabrics are known to sustain burning and burn injury (such as those that would fail 16 CFR Part 1615 or 1616).

Thank you for reopening the record on 16 CFR Part 1610. I commend to you the need for a complete study and evaluation of clothing and apparel burn injury, in light of the public's desire for fire safety and avoidance of unreasonable risk of injury from clothing fires.

Respectfully submitted,

Steven M. Spivak, PhD, CText, FTI.  
Professor Emeritus, Fire Protection Engineering, The University of Maryland.

Flammability 14

**Campbell Crane & Associates**  
**1010 Pennsylvania Avenue, SE**  
**Washington, DC 20003**  
**Phone: (202) 546-4991**  
**Fax: (202) 544-7926**

**Contact: Daniel Crane (email: [dcrane@campbell-crane.com](mailto:dcrane@campbell-crane.com))**

November 12, 2002

Office of the Secretary  
Consumer Product Safety Commission  
Room 502  
4330 East-West Highway  
Bethesda, MD 20814

Re. Clothing ANPR

Comments on Clothing ANPR

We are submitting these comments on behalf of the Shriners Hospitals for Children and the American Burn Association. The Shriners Hospitals for Children is the largest charitable hospital system in the United States, operating 22 hospitals in North America, including four burn centers. These four burn centers treat approximately 20 percent of all serious pediatric burn injuries in the United States. The Shriners Hospitals accept no government, insurance or parental reimbursement for the care provided to tens of thousands of children each year.

The American Burn Association represents the nation's burn care professionals – surgeons, nurses, physical and occupational therapist and other members of the burn team who specialize in caring for patients with burn injuries. The ABA also has as members many of the 139 burn centers in the United States at leading academic medical hospitals.

Shriners Hospitals and the ABA support modernizing the testing standards as proposed by the Commission. While we realize that these proposed changes do not deal with the issue of children's sleepwear, a few related points deserve mention. Even under the more updated testing standards applied to children's sleepwear, a serious under estimation of the extent of children's sleepwear injuries results. The testing standards applied to children's sleepwear do not accurately mirror the conditions under which sleepwear-related burn injuries take place. For example, it is very rare that a child is burned as a result of a brief exposure to a single ignition source, the standard used in testing whether the garment meets the flammability standards. A testing regime should not be confused with the purpose of the safety regulations, which is to protect children and individuals from burn injuries. Even if the garments catch fire as part of a larger conflagration, the likelihood of serious injury or death is sharply reduced if the clothing or sleepwear meet the flammability standards.



In other contexts, the Commission has argued that a burn injury is not sleepwear-related if anything else other than the sleepwear has caught fire. Again, it is highly unusual for a fire to be so confined. Using such a narrow definition of sleepwear-related burn injuries, the Commission has created a false sense of security regarding the dangers posed by sleepwear, especially in those instances where the sleepwear does not meet the flammability standards. Consequently, contrary to the Commission's views, the Shriners Hospitals and other ABA burn centers have observed a significant increase in pediatric burn injuries resulting from children wearing sleepwear that does not meet the flammability standards, either because the children were under 9 months in age, the sleepwear was "tight fitting," and thus exempt from the standards or the sleepwear was mislabeled as daywear.

If the Commission determines to upgrade the flammability standards for all clothing to the level required for sleepwear, the Shriners Hospitals and ABA strongly support this action. However, we caution against exemptions that undermine the efficacy of these standards or other actions, which enable entities to avoid complying with these safety requirements. Similarly, we urge the Commission to recognize that a testing method utilized in the laboratory does not mirror real life situations, and the regulations should attempt to address these practical problems as well.

**Stevenson, Todd A.**

---

**From:** Linnsey Workman [lworkman@campbell-crane.com]

**Sent:** Tuesday, November 12, 2002 1:52 PM

**To:** cpssc-os@cpssc.gov

**Subject:** Clothing ANPR

Attached, please find comments on "16 CFR Part 1610: Standard for the Flammability of Clothing Textiles; Advance Notice of Proposed Rulemaking" (67 FR 57770) by Campbell Crane & Associates, on behalf of the American Burn Association and the Shriners Hospitals for Children.

Contact information is located at top of attached comments.

Thank you.

Campbell Crane & Associates  
1010 Pennsylvania Avenue, SE  
Washington, DC 20003  
Phone: (202) 546-4991  
Fax: (202) 544-7926

11/12/02



## CONSUMER TESTING LABORATORIES, INC .

SOFTLINES TESTING LABORATORY • 2713 S.E. OTIS CORLEY DRIVE • BENTONVILLE, AR 72712

TEL: (479) 273-8028 • FAX: (479) 204-8514, 204-8507

November 12, 2002

Mr. Todd A. Stevenson  
Secretary, Consumer Product Safety Commission  
Washington, D.C.

Dear Mr. Stevenson:

In response to the Advance Notice of Proposed Rulemaking, Consumer Testing Laboratories, Inc. would like to make the following recommendations:

- The proposal mentioned "requiring only the type of laundering/dry-cleaning specified on a garment's care label", we would recommend this change be made to the refurbishing section of the regulation. An example of this would be a fleece sweatshirt that would more than likely never be dry-cleaned.
- We would like to ask the commission to specifically look at the burn characteristics of Spandex and Metallic fibers and consider adding these fibers to the list of exempt fibers.

Thank you for your consideration to the aforementioned recommendations.

Sincerely,

Tammie Rollins  
Manager, Specialty Testing  
Consumer Testing Laboratories

**Specialists in the Evaluation of Consumer Products Since 1952**



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12 November 2002

Office of the Secretary  
U.S. Consumer Products Safety Commission  
Room 502  
4330 East-West Highway  
Bethesda, MD 20814

**RE: ANPR on the Standard for the Flammability of Clothing Textiles,**

The American Apparel & Footwear Association ("AAFA") is pleased to submit comments regarding the upcoming rulemaking on the flammability of clothing textiles, as found in 67 Federal Register 57770-57773. AAFA is the national trade association representing apparel, footwear, and other sewn products companies, and their suppliers, which compete in the global market.

As the Commission notes, the current standard was written in 1953 and has become somewhat outdated due to advances in science and in the textile industry. The purpose of the standard is to "reduce danger of injury and loss of life by providing, on a national basis, standard methods of testing and rating the flammability of textiles and textile products for clothing use, thereby discouraging the use of any dangerously flammable clothing textiles." Much has changed since 1953, but the goal of the standard remains the same, as it should. **However, it is important to state that the standard has indeed been working correctly in the years since it was adopted, and any changes needed are purely technical in nature, reflecting only the advances in testing equipment and technique.**

In its Advanced Notice of Proposed Rulemaking ("ANPR"), the Commission has asked for public comment in a number of areas, most specifically in the arena of "Regulatory Alternatives." Below are a number of suggestions that AAFA has gleaned from its membership, in the order in which they appear in the ANPR. For clarification, suggested *language will appear in italics* whereas general comments will remain in normal font.

[The Commission will note that throughout this document, references are often made to the American Society for Testing and Materials ("ASTM") standard "D1230." AAFA and its members endorse this standard in general and endorse its use in this rule.]

## **1. CHANGES TO THE FLAMMABILITY TESTER.**

The ANPR states that the flammability tester prescribed in the current standard is no longer available. Thus, the Commission is considering requiring something more modern, such as a 45-degree flammability tester or equivalent, which requires attributes that reflect the requirements of 16 CFR1610.4 with the following additions:

*§1610.4 (b) (2) - Movable rack: Refer to the manufacturers' instruction in relation to the adjustment procedure to move the rack into the appropriate position for the indicating finger alignment. (This language is designed to ensure that different brands of testers are operated properly.)*

*§1610.4 (b)(6) - Suggest that the ignition apparatus to be used should be that which is listed in the most current effective version of the ASTM standard D1230, or its successor.*

## **2. CHANGES TO THE DRY CLEANING PROCEDURE.**

The ANPR notes that perchloroethylene, though specifically mentioned in the current standard, is no longer popular amongst consumers as it has been shown by the Environmental Protection Agency ("EPA") to be hazardous. Indeed, the state of California, in recent legislation, is attempting to outlaw the substance. With advances in dry cleaning technology (and with more expected to come), AAFA members recommended not specifying a dry cleaning solvent in the regulations and instead recommend the following:

*§1610.4 (d) Refurbishing: For samples that are labeled " Dry Clean only", samples are not laundered. If samples are labeled " washable", then samples are refurbished by processing the fabric through:*

- a.) a commercial drycleaner using a commercial dry cleaning solvent or;*
- b.) an in-house process comparable to a commercial drycleaner using a commercial dry cleaning solvent.*

*Then, follow the washing procedure listed at §1610.4 (e). All dry clean samples are dry cleaned for one cycle without pressing. If the samples do not withstand the dry cleaning process, (example: layers separate, fabric shreds or distorts or fabric changes severely in appearance), then results and classification will be based on the "wet refurbished" results only. If the samples do not withstand either process, then results and classification will be based on the "as received " results only.*

In addition to the above, please note that the ASTM D1230 has acceptable guidelines for refurbishing methods.

### **3. CHANGES TO THE HAND WASHING PROCEDURE.**

The ANPR noted that the washing procedures under §1610.4 (e) is outdated and should be replaced, possibly with laundering requirements similar to that of the American Association of Textile Chemists and Colorists ("AATCC") 124. AAFA notes that instead of AATCC standards, it may be helpful to follow the guidelines in the ASTM D1230 (or its successor).

### **4. CLARIFYING SELECTION OF SURFACE/DIRECTION FOR TESTING.**

In order to clarify several areas under the "Methods of Test" section of the current standard – section §1610.4 (a) - AAFA suggests a few modifications to the following:

*§1610.4 (a) (2) - For plain surface textile fabrics, the long dimension and surface shall be that in which they burn most rapidly. To determine which direction, one specimen in each direction (warp/wale and filling/course) shall be burned as specified in §1610.4 (g) to quantify the rate at which each sample burns.*

*§1610.4 (a) (3) – For raised surface textile fabrics, the direction of the lay of the surface fiber shall be parallel with the long dimension of the specimen on the surface that burns most rapidly during the preliminary test. To determine which direction is the long dimension, it is suggested to:*

*Place 2 strips of ½ inch adhesive tape (such as cellophane or equivalent) parallel to each other on the face of the fabric in the same direction. Remove the tape by pulling from opposite ends of the tape. Observe which direction exhibits the most severe condition of raising the surface fibers. Brushing per §1610.4 (f) against the fiber in the most severe direction will be the direction to test the specimens.*

*For textile fabrics with varying depths of pile, tufting, etc., the specimens are taken from each depth of pile/and plain surface area to determine which exhibits the quickest rate of burning. Additional specimens are cut from the quickest burning direction to complete testing. This procedure should be repeated after refurbishing to complete testing.*

*Use the procedure found in §1610.4 (a) (2) if the direction to burn cannot be determined by the above procedures.*

*§1610.4 (a) (5) - The specimens used for testing are cut (each 2 x 6 inches) and marked on the back, or at the top right corner on the side of the fabric to be burned, indicating the direction to burn and brush the specimens. Specimens are then placed in the holders,*

*with the side to be burned face up, and the end of the specimen, which is marked to be placed at the top of the holder with the closed end.*

NOTE: Because of our recommendation in §1610.4 (a)(3), AAFA believes that §1610.31 (e) should be deleted from the standard.

## **5. CLARIFICATION OF WHEN TO TEST 5 ADDITIONAL SPECIMENS.**

AAFA suggests the following language:

### §1610.32 (b) (4)

*Plain surface textile fabrics – Test 5 specimens. If one specimen ignites and burns the stop cord in less than 3.5 seconds, test 5 additional specimens. Compute the average of the 10 specimens that ignited. Base the classification on those specimens that ignite. If only one specimen out of 10 ignites and has a burn rate of less than 3.5 seconds, then classify the sample as a Class 1.*

*If 2 or more specimens out of 5 ignite and exhibit a burn rate, average those specimens that burn the stop cord and determine the class based on the average that ignite. If the average is greater than 3.5 seconds then classify as a Class 1. If the average is below 3.5 seconds, classify the specimens as a Class 3.*

*Raised surface textile fabric – Test 5 specimens. If one sample ignites and exhibits base burns in less than 4.0 seconds, test 5 additional specimens. If only one of the 10 specimens exhibit a base burn, classify as a Class 1. If 2 or more specimens exhibit base burning, only average those specimens that exhibit a base burn. Determine a classification based on the average of the specimens that exhibit base burns.*

## **6. TEST PROCEDURE**

AAFA suggests the following language:

*§1610.4 (g)(5)- Press the start button to begin the test. This controls the ignition of the flame to the fabric and starts the timing mechanism after the period of one second. Ignition should be performed within 45 seconds of the time the specimen was removed from the desiccator. Timing is automatic and stops when the weight is released by the burning of the stop cord.*

§1610.4 (g) (6) - Record the time of the flame spread (reading of the timing mechanism) of each specimen and note whether the base of the specimen of a raised fiber surface is ignited or fused to a point where the damage is apparent from the bottom of the specimens. Please note for raised fiber surfaces specimens should continue to be burned to determine if the base fabric will burn even though a timed rate is achieved.

**NOTE:** Base fabric ignition means the base of the specimen of a raised surface textile fabric is ignited or fused to a point where the damage is apparent from the back of the specimen (See “terms defined” at the end of Section 12 in these comments).

## **7. ADD TEST RESULTS CODE**

While not currently found in the standard, AAFA suggests the following language be incorporated either in §1610.4 (g) (6) or in the section entitled, “Terms defined”:

*The following is the definition for test results codes, which are to be used for recording flammability results for each specimen, which is burned.*

### **Plain Surface Textile Fabrics:**

<i>DNI</i>	<i>Did not ignite</i>
<i>IBE</i>	<i>Ignited but self-extinguishes</i>
<i>0.0 BB</i>	<i>Time in seconds, Base Burn (record time in seconds to the tenth of a second)</i>

### **Raised Surface Textile Fabrics:**

<i>SF poi</i>	<i>Surface flash at the point of impingement (equivalent of DNI)(used for Class 1)</i>
<i>SF pw</i>	<i>Surface flash part way (no timed rate)(used for Class 1)</i>
<i>SF uc</i>	<i>Surface flash under the cord (no timed rate) (used for Class 1)</i>



0.0 SFBB	<i>Time in seconds consisting of surface flash, and base burning from point other than the point of impingement (used for Class 2, and 3)</i>
0.0 SFBB poi	<i>Time in seconds consisting of surface flash and base burning from the point of impingement (this is used for Class 1) This does not qualify as a Base Burn.</i>
0.0 SF only	<i>Time in seconds consisting of surface only with no base burning (used for Class 1)</i>
*0.0 SFBB poi	<i>Time in seconds, surface flash base burn possibly starting at the point of impingement. The asterisk is accompanied by the following: "Unable to make absolute determination as to the source of base burns." This note is added to the result of any specimen if there is a question as to the origin of the base burning. It does not qualify as a base burn under the current interpretation of CFR §1610.</i>
0.0 BB Only	<i>Base Burn Only</i>

## **8. SPECIFICATION OF DIFFERENT DESICCANT.**

The recognition of silica gel as a more effective, reliable and economical desiccant can be done in the following manner:

§1610.4 (f) - *Brushing and drying specimens: Each specimen having a raised fiber surface, in its original condition or after dry cleaning and washing, is placed in the specimen holder and brushed once against the lay of the raised fiber surface. All specimens in the holders are then placed and dried in an oven in a horizontal position for 30 minutes at 221 °F (105 °C). The samples are then removed from the oven and placed over a bed of anhydrous silica gel in a desiccator until cool, but not less than 15 minutes.*

NOTE: *Anhydrous silica gel is normally blue in color. It will change to pink color when it loses its power to absorb moisture showing that it needs to be replaced. Silica gel can be restored by spreading it in a flat tray and heating it in an oven (at about 105 °C) until the blue color returns.*

#### **9. SPECIFYING THAT TAPE CAN BE USED TO SECURE SPECIMENS IN THE SPECIMEN HOLDER.**

In Section 4 above - involving changes to §1610.4 (a) (3) – it is suggested to use ½ inch adhesive tape (such as cellophane or equivalent) to determine the long dimension of the fiber. The Commission has asked in the ANPR if tape should be used to secure specimens in the specimen holder. AAFA believes that using tape to secure the specimens in the specimen holder is acceptable, provided that the tape does not extend into the area to be burned.

#### **10. REORGANIZING SOME TEXT OF THE RULE FOR CLARITY.**

In §1610.3, the regulation lays out basic requirements of the three classes. Although Class 3 states that the trade believes such fabrics are unsuitable for clothing, there is no affirmative statement stating that Classes 1 and 2 CAN be used for clothing. Such statements do not first appear until §1610.62(a)(2). We believe the regulation would be clarified if, after the definition of each class, there appeared a statement inserted into the respective class description that read thus:

- *“Class 1 textiles exhibit normal flammability and are acceptable for use in clothing.”*
- *“Class 2 textiles, applicable only to raised fiber surfaces, are considered to be of intermediate flammability, but may be used for in clothing.”*
- *“Class 3 textiles exhibit rapid and intense burning are dangerously flammable and may not be used in clothing.”*

As a general comment, we believe the regulations should be organized to more clearly draw a distinction between fabrics that are napped and those that are not napped. We note that in “plain surface textile fabric” and “raised surface textile fabric”, respectively. We propose that these terms be used exclusively and repeatedly throughout the various subparts of the regulations. For example, in §1610.3, under the various paragraphs (i) and (ii) in (a)(1), (a) (2), and (a) (3), the terms “plain surface textile fabric” and “raised surface textile fabric” should be used as the headers instead of the ones that begin “textile without nap...” and “Napped, pile...”, respectively. Similarly, in §1610.4, as we have noted elsewhere, paragraph (a)(2) should begin “For plain surface textile fabric...” while (a)(3) should begin “For raised surface textile fabric....” and so on.

In several places, the regulation specifies that records need to be retained but does not provide any definitive time period. For example, in §1610.36 (a) and in §1610.39 (c)(1), the regulations call for records retention but there does not appear to be a time limit for records retention in those sections. In §1610.38, records are required to be maintained for 3 years, but it is unclear that those record retention limits apply with respect to the requirements created in §1610.36(a) and §1610.39(c)(1). We believe language should be added that clarifies a limit for record retention for this section.

§1610.39 makes repeated reference to the Bureau of Customs. We would suggest these references be updated to refer to the *U.S. Customs Service*.

§1610.61 contains paragraphs (c)(1), (c)(2), (c)(3) that provide information that we believe should be incorporated into the body of the regulations at the appropriate spot. For example, the language in (c)(1), relating to the stop cord, should be amended to §1610.4(b)(7), which also relates to the stop cord. The language in (c)(2), relating to brushing, should appear as part of §1610.4(f), which also relates to brushing. Finally, the language in (c)(3), which strikes as a key language to this regulation, should probably appear as part of a new paragraph in §1610.32.

#### **11. CLARIFYING OR AMENDING THE EXEMPTIONS FROM THE REQUIREMENTS FOR TESTING TO SUPPORT GUARANTIES.**

§1610.62(a)(4) contains the statement “A guaranty issued by a person who is not a resident of the United States may not be relied upon as a bar to prosecution.” We encourage the Commission to review this statement. The Flammable Fabrics Act dates back to a time when most clothing, and the fabric used in that clothing, was produced in the United States. In 2001, about 90 percent of all clothing consumed in the United States was imported. Moreover, with the globalization of this industry, a number of world-class laboratories capable of performing flammable fabric testing have been established around the world. We recommend this provision be modified to permit the use of foreign flammable testing off shore such that a guaranty issued by a non U.S. resident would have legal standing. We note that, late in this section in the “Suggestions” paragraph, there is a suggestion that companies “purchase fabrics or garments that have been guarantied and/or tested by the supplier...” In many cases, those suppliers are offshore so this suggestion makes the most sense when the import guaranty restrictions are modified to permit the use of such guaranties.

## 12. OTHER SUGGESTIONS BY AAFA.

### a.) AAFA suggests the following changes to the standard:

\* §1610.62 contains a general statement on applicability (in paragraph (b)). We urge the Commission to update the information about recalls over the past few years and to use statements that will remain evergreen. For example, instead of stating "Since August 1994...." the statement should instead read "*Between August 1994 and August 2002 there have been xx recalls*" or "*There have been numerous recalls*" or language to that effect.

\* §1610.37 (d)(2) exempts textiles (both raised surface and plain surface fiber textiles) made from certain fibers. AAFA proposes adding 4 more textile products to this exemption. They are:

- 1.) *specialty wool fibers;*
- 2.) *leather;*
- 3.) *fur and;*
- 4.) *suede*

### b.) AAFA recommends the following new sections be added at the appropriate sections to reflect developments in the industry:

\* ADD NEW SECTION stating that, "*trim fabrics less than 2 inches in width in either direction are not tested.*" (This language can either be added as a part of a new "Exceptions" section or under §1610.4 (a) (5).

\* ADD NEW SECTION – §1610.36 (g) - *Fringe fabrications greater than 6 inches length require separate testing from the base fabric as per the regulation. A special procedure to rack and support the regulation is as follows: Using the stop cord thread, wrap the lower frame with the thread spacing each wrap 1 inch apart at its' widest. Place the specimen to be tested over the bottom frame and thread, and cover with the top frame and place in oven for required time. If necessary, wrap the thread around the bottom of the top frame (2 times below the point of impingement) to stabilize the position of the fringe and hold it in place. Remove from oven and condition as normal by placing samples in the dessicator. Complete testing as normal.*

\* ADD NEW SECTION - §1610.36 (h) - *Feather samples / fabric trim samples which form an integral part of wearing apparel should be tested and refurbished as per the regulation, and retested after one drycleaning/ laundering using the racking procedure outlined in §1610.36 (h).*

- 1. If the garment is labeled " Dry-clean " only, with a feather trim, then the feathers/trim may be tested after 1 Dry cleaning.*
- 2. If the care label states the following " garment may be dangerously flammable if Dry-cleaned or washed", then the sample is tested as received only.*
- 3. If a care label states " Remove feather/ fabric trim before laundering or dry-cleaning", then full testing will be required on the base garment. Trim would be processed as received only.*

\* NEW DEFINITIONS TO ADD - § 1610.31 "Terms Defined" -

- 1. The term Base Burn means the point of which the flame burns the ground (base) fabric and provides a self-sustaining flame. Base burns are those base burns that occur on specimens in places other than the point of impingement.*
- 2. The term Surface Flash means the spread of the flame on the surface fibers of the specimens from the flame impingement has no base burning.*
- 3. The term Ignition means a self-sustaining flame is propagated from impingement of the test flame.*

## CONCLUSION

AAFA and its members appreciate this opportunity to comment on the ANPR. We are available to answer any questions or concerns that the Commission may have regarding the contents of this submission. If needed, AAFA's Government Relations Department can be reached at 703.797.9039.



Rachel Subler  
Manager of Government Relations & Communications

ORIGINAL 17 #

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November 12, 2002

Office of the Secretary  
Consumer Product Safety Commission  
Room 502  
4330 East-West Highway  
Bethesda, MD 20814

**Re: Comments of the Fashion Accessories  
Association Response to the Commission's  
Advance Notice of Rulemaking on the  
Standard for the Flammability of Clothing  
Textiles (67 Fed. Reg. 57770)**

Dear Mr. Secretary:

These comments are filed on behalf of the Fashion Accessories Association (FAA) which is a non-profit trade organization comprised of importers and distributors of scarves, handkerchiefs, shawls and like articles. High fashion silk scarves are the primary products imported and distributed by FAA member companies. Meeting existing flammability standards has been in the past, and remains today, a serious and important consideration for association members.

The FAA and its member companies support current flammability standards, and have no objections to any of the Commissions' proposals to modernize current testing procedures. Moreover, the FAA urges the commission to continue with its enforcement of the flammability rules to ensure that products,

*Shannette, Paley, Carter & Blauvelt, P. C.*

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which are potentially flammable such as very sheer silk scarves are properly treated so as to be in conformity.

Thank you for the opportunity to submit these comments.

Very truly yours,

*Allison M. Baron*

Allison M. Baron *ag*

AMB/jb



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NATIONAL ASSOCIATION OF STATE FIRE MARSHALS

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**Executive Committee**

November 18, 2002

**TO: US Consumer Product Safety Commission**

**FROM: Donald P. Bliss, President**

**RE: Comments on Standard for the Flammability of Clothing Textiles;  
Advance Notice of Proposed Rulemaking, *Federal Register*, September 12, 2002.**

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The National Association of State Fire Marshals (NASFM) represents the most senior fire safety official in each of the 50 states and District of Columbia. Our mission is to protect life, property and the environment from fire. NASFM appreciates this opportunity to comment on the US Consumer Product Safety Commission's Advance Notice of Proposed Rulemaking (ANPR) to update the 1953 Standard for the Flammability of Clothing Textiles.

In 1953, Ike was President; Josef Stalin died; Osama bin Laden would not be born for four years; Senator Joseph McCarthy began hearings on communist subversion in America; the Korean War Armistice was signed; Dr. Jonas Salk announced that he had discovered a vaccine for polio; the "Today" show was in its second year; and the first commercially successful computer, the UNIVAC, was a year old. Since 1953, America has changed culturally, politically, socially, commercially and scientifically.

In 1953, Dupont began the first commercial production of polyester and Congress passed the Federal Flammable Fabrics Act. The Act was an honest effort to address a fire safety problem as it was understood almost fifty years ago.

*This Commission – the Commission chaired by Harold Stratton – is only a few months old, but it is moving forward with a renewed commitment to common sense approaches to fire safety. It is doing so in a way that invites an honest discussion of old concerns and new ideas.*



In its September 12, 2002, Federal Register notice, the Commission spoke of regulatory alternatives to the existing method and standard. All of the suggested changes are logical and some are environmentally necessary. They all should be made. But they do not go far enough.

NASFM likens this exercise to a person attempting to drive a 1953 Studebaker with today's fuels, speeds, highway conditions, and safety and environmental requirements. If transportation is the goal, a 1953 auto is not the answer, and to keep it on the road for much longer would be a dangerous choice.

NASFM welcomes the Commission's ANPR on clothing flammability as the first fresh look at this issue in decades. But NASFM encourages the Commission to view its work as much more than an opportunity to keep an old car on the road.

The ANPR cites 153 deaths and an estimated 4,000 hospital emergency department treated injuries annually from clothing ignitions. A closer examination of the data<sup>1</sup> reveals few surprises. Children between the age of 5 and 14 and adults over the age of 65 are significantly more at risk in these fires than the general population.

Age	Number per million 1994-1999
0-4	14.10
<b>5-14</b>	<b>26.45</b>
15-24	16.64
25-44	11.72
45-64	10.39
<b>65+</b>	<b>18.24</b>
Overall	15.33

We view the data pertaining to injuries as a critical factor in determining an appropriate way forward. However, these numbers may be understated because of the way in which they are recorded.<sup>2</sup>

Many of these burns require far more than an emergency room visit, but the National Electronic Injury Surveillance System (NEISS) data do not indicate the severity of the burns. Certainly, some burn patients return home immediately, but many proceed from the emergency room through years of surgical and medical treatment, as well as physical and emotional therapy. Some die after much

<sup>1</sup> Average annual clothing burn injuries, 1994-1999, NEISS.

<sup>2</sup> According to the Journal of Burn Care and Rehabilitation, May/June 1992, approximately 2.4 million burn injuries are reported per year. It seems unlikely that just 4,000 are related to clothing, given the fact that most people are clothed most of each 24-hour period. According to the Journal, approximately 650,000 of all burn injuries are treated by medical professionals; 75,000 are hospitalized. Of those hospitalized, 20,000 have major burns involving at least 25% of their total body surface. Between 8,000 and 12,000 of patients with burns die – but often from pneumonia and other complications suffered during hospitalization – and approximately one million will sustain substantial or permanent disabilities resulting from their burn injury.

suffering. Depending on the material, fit and construction of a garment, clothing textiles may create a short but intense fire or may stick to a person's skin and burn for a time. These may result in very different injuries. As we will discuss later, these "real world" circumstances must be contemplated in any action the Commission ultimately takes.

NASFM encourages the Commission to move forward in three stages.

1. The first stage would be to remind clothing manufacturers and retailers of their obligations under the statutes related to product recalls. Quite apart from the current standard, the apparel industry has a moral and legal obligation to keep hazardous products from the market.

2. The second stage would be to enact those "regulatory alternatives" that have been proposed. In addition, NASFM proposes that the Commission make additional changes to the fundamental test that has allowed 153 deaths and over 4,000 injuries a year.

~~2.2~~ The Commission should move the point of ignition from the fabric surface to the bottom cut edge, which is the most flammable point.

~~2.3~~ The Commission should extend the ignition time to at least five seconds. The existing "one second" standard does not relate to any real-world fire scenario. In the short-term, lengthy research into the correct value – should it be 5 seconds or 6 seconds? – is a waste of time and resources. An intelligent value can and should be based on what is known about the most common scenarios and then set as an emergency measure.

~~2.4~~ The Commission should change the orientation of the test fabric from 45 degrees to vertical. Most clothing fabrics are in this position when burning is initiated.

~~2.5~~ The Commission should change the size of the ignition flame source to simulate more realistically the ignition of the fabric by candles, lighters, and matches.

~~2.6~~ The Commission should base the acceptance criteria on extent of flame spread, not rate of flame spread. The current rate of flame spread criteria has not protected the public adequately.

As stated in the *Federal Register* notice announcing this ANPR, the 50-year-old Flammable Fabrics Act is quite explicit in its intent to prohibit "the importation, manufacture for sale, or sale in commerce of any article of wearing apparel that is 'so highly flammable as to be dangerous when worn by individuals.'"<sup>3</sup> However, the existing test does not begin to meet the intent of the statutory requirement. Our research indicates that a sheet of newspaper will pass. A Kleenex tissue will pass. Specimens can be totally consumed and still pass.

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<sup>3</sup> Consumer Product Safety Commission, 16 CFR Part 1610, Standard for the Flammability of Clothing Textiles; Advance Notice of Proposed Rulemaking, *Federal Register*, Vol. 67, No. 177, September 12, 2002, p. 57770.

In related work currently being examined by the Commission, commercially available bed clothing – certain polyester-filled comforters – was easily ignited and quickly resulted in horrific fires in tests conducted at the National Institute of Standards and Technology (NIST) and at the California Bureau of Home Furnishings and Thermal Insulation. While not destined to be used as clothing, comforters are made from many of the same materials and are in close proximity with the skin. NASFM believes it is likely that these comforters would pass the current clothing flammability standard.

Back in 1968, the US Department of Commerce published a finding in the *Federal Register* indicating that the existing wearing apparel standard was inadequate “based on the fact that the testing procedures established by the existing standard of flammability are considered to be technically inadequate to protect against unreasonable risk of the occurrence of fire leading to death or personal injury, or significant property damage.”<sup>4</sup> Several failings of the current standard were cited. Proceedings were instituted through the *Federal Register* notice to improve the standard, but apparently no substantial changes were enacted at that time.

Over the years, other experts in textile flammability have pointed to improvements that should be made to the 50-year-old test, including increasing the ignition flame to a more realistic size; evaluating thermoplastic or melting fabrics; and measuring other flammability properties in addition to ignition. However, NASFM believes that simply fiddling around with the existing standard will not lead to the kinds of improvements that will save lives, and that an additional step must be taken.

3. The third stage must be to go beyond updating and strengthening the standard, to take an entirely fresh approach to the challenge of reducing the flammability of clothing. NASFM recommends basing this stage on the model set by the Sleep Products Safety Council’s (SPSC) work on bedding system flammability. Here are the elements of that model as they relate to clothing flammability.

**Safety begins with questions of how finished products perform in the real world.**

Comparing the data shown above to what we observe at fire scenes, we make two observations.

- ~~✂~~ Children in the 5-14 age group are unprotected by the Commission’s cigarette lighter child-proofing standard. Juvenile fire-setting is one of NASFM’s highest priorities and the subject of a cooperative agreement with the US Department of Justice. We know from our work that children often set their clothing on fire.
- ~~✂~~ Adults over 65 years old are highly vulnerable to cooking fires – incidents where loose, flammable clothing is ignited by the flame or heating coil on a stove. Similar ignitions involving candles are also of concern.

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<sup>4</sup> US Department of Commerce, Notice of Finding that Flammability Standard or Other Regulation May Be Needed and Institution of Proceedings, 15 CFR Part 7, Wearing Apparel, *Federal Register*, Vol. 33, No. 207, October 23, 1968.

A clothing flammability standard designed to meet the intent of the 1953 law would be based on how people are dying and being injured in these fires.

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**Effective standards are based on good science.**

We define "good science" as that which is performed by credible, objective, honest researchers using well-accepted scientific principles and methods. In the past, so many fire safety standards were set with little or no science, often as a matter of political or commercial negotiation. The "one second" ignition exposure in the current test could not have been based on science and, even in 1953, bore no relevance to materials in use. The SPSC-sponsored work on mattresses and bedding was conducted at NIST and has produced spectacular results.

**Effective standards require that, in the pursuit of protecting people from fire, we do not expose them to other harm.**

NASFM has established a close working relationship with environmental protection and health authorities and scientists in the US and Europe, so that our fire safety initiatives can prevent another "TRIS," "asbestos," "PCBs" or "halon"- type situation. The use of all of these technologies was justified by their fire protection benefits. All posed unintended negative consequences. But mistakes of the past should not be used as an excuse to prevent progress today. As fire safety and environmental officials work more closely together, the concerns of unintended negative consequences will be better anticipated and addressed.

**Effective standards recognize the realities of the marketplace.**

The clothing industry is a global market. Materials and finished products may be produced virtually anywhere, and sold virtually anywhere. Focusing strictly on the practices of American-based companies is neither practical nor fair. The treaties and statutes governing trade allow nations to protect their citizens, as long as standards are based on good science.

For an item to be clothing – that is, something people will wear – it must be comfortable, attractive and affordable. But no one can honestly suggest that these qualities are incompatible with safety. New manufacturing processes have demonstrated that comfort does not need to be compromised in the pursuit of safety. An upholstered chair can be made to meet tough fire safety standards for an additional \$8; most garments use a fraction of the amount of fabric used in such a chair.

**Effective standards are enforceable.**

The fundamental flaw in attempting to regulate a category such as "children's sleepwear" is that youngsters are as likely to wear sweat suits, underwear or a parent's T-shirt to bed as they are to wear clothes intended to be worn as pajamas. NASFM believes that an effective base standard for all clothing (i.e., not just one pertaining to a particular use category) is the one way of addressing this problem.

**Effective standards are enforced.**

We share industry's concerns about the need for a level playing field. The Commission's Memorandum of Understanding (MOU) with the US Customs Bureau is a positive step forward, but we do not have nearly enough adequately trained and equipped inspectors in place.

NASFM does not believe that safety standards must necessarily be mandatory in order to be effective. NASFM will support voluntary standards as long as they adequately prevent fires. The irony, however, is that many industries have now come to NASFM asking us to support mandatory fire safety standards. These companies tell us that, without mandatory standards, too many companies ignore their obligations and – with cheaper, non-compliant materials – undercut responsible producers in the market.

**Industries can move faster than regulation.**

For many manufacturers and retailers, this discussion may be academic at best. Regrettably, they must put up with the “no good deed goes unpunished” doctrine of politics. But, in the real world, materials and finished product producers often conduct their own research and set their own standards well above what is required. If that were not the case – given the 50-year-old test – we suspect the number of deaths and injuries from clothing would be much higher.

The statute encourages the development of voluntary standards, at least as a first step.

While the Commission focuses on the immediate issues related to the existing test method and pass/fail criteria, NASFM proposes the formation of a voluntary task group to define clothing flammability standards based on the model described above.

Because we must address this challenge on a global scale, NASFM suggests that a new organization – the International Consortium for Fire Safety, Health and the Environment – act as host to this group. The Consortium exists for precisely this purpose. If the idea appeals to the Commission, NASFM would be pleased to arrange for a detailed briefing on this new entity. The task group would be charged with:

- ~~///~~ Defining real-world scenarios,
- ~~///~~ Developing predictive test methods,
- ~~///~~ Proposing pass/fail criteria,
- ~~///~~ Identifying and resolving unintended negative consequences,
- ~~///~~ Encouraging innovation to address the various safety, environmental and health concerns,
- ~~///~~ Working with authorities to improve enforcement at borders, and

~~22~~ Issuing policy recommendations to amend the Flammable Fabrics Act in ways that remove regulatory barriers while making higher levels of safety possible.

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The cost of this work would be shared by the industries that make and sell the materials and clothing in question. For those industries that wish to set their own course in a responsible way, we believe this initiative provides an important opportunity. We regard these industries as our full partners in safety and would look forward to working with them.

The Commission needs to keep its 1953 Studebaker running a while longer. That will require some common-sense adjustments to the existing method and standard. Enforcing the law requires more than what the Commission alone can achieve. NASFM hopes that its suggestions on a cooperative way forward are helpful and result in an approach that serves consumers' interests in fire safe, environmentally clean, attractive and affordable clothing.

**Stevenson, Todd A.**

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**From:** KFernico@aol.com  
**Sent:** Monday, November 18, 2002 6:44 PM  
**To:** cpssc-os@cpssc.gov  
**Subject:** Clothing ANPR

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TO: Margaret Neily

Dear Margaret,

Here is an additional submission from NASFM on the Clothing ANPR.

Best regards,  
Karen Suhr  
NASFM Government Relations

11/19/02

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